

THE
WORLD
ON
PAPER



THE CONCEPTUAL AND
COGNITIVE IMPLICATIONS
OF WRITING AND READING

DAVID R. OLSON



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The noblest acquisition of mankind is SPEECH, and the most useful art is WRITING. The first eminently distinguishes MAN from the brute creation; the second, from uncivilized savages.

(Astle, 1784, p. i)

There can be little doubt that a major feature of modern societies is the ubiquity of writing. Almost no event of significance, ranging from declarations of war to simple birthday greetings, passes without appropriate written documentation. Contracts are sealed by means of a written signature. Goods in a market, street names, gravestones – all bear written inscriptions. Complex activities are all scripted whether in knitting pattern books, computer program manuals, or in cooking recipe books. Credit for an invention depends upon filing a written patent while credit for a scientific achievement depends upon publication. And our place in heaven or hell, we are told, depends upon what is written in the Book of Life.

Correspondingly, among our most highly valued skills is our ability to make use of written texts, namely, our literacy. The primary function of the school is to impart what are called “basic skills,” reading, writing and arithmetic, all of which involve competence with systems of notation. Public expenditure on education is rivalled only by defense and health and a major portion of children’s formative years are spent in acquiring, first, some general literate competence and second, in using this competence to acquire such specialized bodies of knowledge as science and history.

Nor are the social concerns with literacy confined to a particular class or society. Free, universal public education has been government policy for well over a century in western democracies. Developing countries, too, frequently set the goal of a literate citizenry high in their priorities. Socialist movements of the twentieth century, whether in the Soviet Union, Cuba or Nicaragua, were accompanied by

intensive programs to make everyone literate. An UNESCO policy document (1975) described literacy as crucial to “the liberation and advancement of man,” and initiated a plan for the eradication of illiteracy by the year 2000. And demographers record, as part of the vital statistics for each nation, the percentage of persons who are illiterate. The figure given for Canada is fifteen percent, a figure which elicits both alarm and accusations in the popular media. Modern western democracies aspire to eradicate illiteracy as a means of solving a range of other social problems such as poverty and unemployment and the schools are routinely charged with upgrading the literacy standards of their students.

Where does this enthusiasm for literacy come from? For some three hundred years we in the West rested our beliefs in our cultural superiority over our pre-literate ancestors as well as over our non-Western neighbors, on our access to a simple technological artifact, an alphabetical writing system. Our social sciences tended to help us sustain that view. Theories of evolution, progress, and development all contributed to the comfortable view of our own superiority and the superiority of the means that allowed us to develop it.

In the past two decades this comfortable view has begun to come apart. Cultures with less literacy have come to see the value western cultures set on literacy as self-serving, as a form of arrogance (Pattanayak, 1991) and western scholars have found the rhetoric of literacy far exceeding the validity of the claims. Indeed, the evidence has begun to accumulate that our beliefs about literacy are a blend of fact and supposition, in a word a mythology, a selective way of viewing the facts that not only justifies the advantages of the literate but also assigns the failings of the society, indeed of the world, to the illiterate.

The situation in regard to literacy is not dissimilar to that faced a century ago by Christian theologians who began to cast a critical eye over the tradition that had come down to them and, recognizing certain archaic modes of thought and expression, adopted the task of “demythologizing” Christianity. The justification for this activity was not to undermine the hopes of the faithful but to put those hopes on a firmer, more truthful ground. Humble faith based on a secure foundation, they urged, was preferable to a robust faith based on surmise.

The faithful, of course, were not always willing to cash in the old for the new.

We are faced with a similar choice in regard to our beliefs and assumptions about literacy. The faithful need not be overly alarmed. The assumptions about literacy that we may have to abandon are not worth holding in any case. Indeed, they underwrite poor social policy and poor educational practice. And the new understanding of literacy that may emerge as we critically examine the facts, promises to have implications and uses far greater than those which the old dogma yielded. What we shall lose is the naive belief in the transformative powers of simply learning to read and write and calculate, the magical powers of the three Rs. More importantly for our purposes, we shall be able to move beyond the mere tabulation of pros and cons and set the stage for a new understanding of just what was involved in creating and now living in “a world on paper.” That is the main purpose of this chapter.

There are six deeply held and widely shared beliefs or assumptions about literacy on which current scholarship has cast considerable doubt.

First the beliefs:

(1) Writing is the transcription of speech. The fact that almost anything we say can be readily transcribed into writing and that anything written can be read aloud makes irresistible the inference that writing is just speech “put down.” Indeed, this is the traditional assumption dating back to Aristotle but explicitly expressed in the technical writings of Saussure (1916/1983) and Bloomfield (1933). Since readers are already speakers, learning how to read comes to be seen as a matter of learning how one’s oral language (the known) is represented by visible marks (the unknown). Old wine, new win-eskins.

(2) The superiority of writing to speech. Whereas speech is seen as a “loose and unruly” possession of the people, as Nebrija, the fifteenth-century grammarian, described oral Castellan to Queen Isabella (Illich & Sanders, 1989, p. 65), writing is thought of as an instrument of precision and power. Reading the transcription of one’s oral discourse is a humbling experience, filled as it is with hesitations, false starts, ungrammaticalities and infelicities. Speech on important public

occasions is scripted – written, planned and corrected – to achieve the goals of saying precisely what is meant and yet appearing sincere and spontaneous. One learns to write, in part, as a means of learning to express oneself correctly and precisely in one’s oral speech.

(3) The technological superiority of the alphabetic writing system. The invention of the alphabet by the Greeks is taken as one of the high points in cultural evolution, achieved only once in history and its presence serves, to this day, to distinguish alphabetic from non-alphabetic cultures. An early expression of this idea can be found in Rousseau’s *Essay on the origin of language*:

These three ways of writing correspond almost exactly to three different stages according to which one can consider men gathered into a nation. The depicting of objects is appropriate to a savage people; signs of words and of propositions, to a barbaric people, and the alphabet to civilized peoples.

(1754–91/1966, p. 17)

Samuel Johnson, Boswell tells us, considered the Chinese to be barbarians because “they have not an alphabet” (cited by Havelock, 1982). To this day the French language makes no distinction between knowledge of writing generally and knowledge of the alphabet, both are “alphabétisme.” Presumably other forms of writing are not “true” writing systems. The three classical theories of the invention of writing, those of Cohen (1958), Gelb (1963) and Diringier (1968) all treat the evolution of the alphabet as the progressive achievement of more and more precise visible means for representing sound patterns, the phonology of the language. The representation of ideas through pictures, the representation of words through logographic signs, the invention of syllabaries are all seen as failed attempts at or as halting steps towards the invention of the alphabet, it being the most highly evolved in this direction and therefore superior.

Havelock, perhaps the foremost authority on the uses and implications of the Greek alphabet, has written:

The invention of the Greek alphabet, as opposed to all previous systems, including the Phoenician [from which it was derived] constituted an event in the history of human culture, the importance of which has not as yet been fully grasped. Its appearance divides all pre-Greek civilizations from those that are post-Greek. On this facility were built the foundations of those twin

forms of knowledge: literature in the post-Greek sense, and science, also in the post-Greek sense.

(1982, p. 185; see also 1991)

McLuhan (1962) was, of course, among the first to explore the relations between communication technologies, particularly the alphabet and the printing press, and the “galaxy” of intellectual, artistic and social changes that occurred with the Greeks and again at the end of the Middle Ages, a relation he summed up thus: “By the meaningless sign linked to the meaningless sound we have built the shape and meaning of Western man” (p. 50), thus tying intellectual progress to the alphabet.

(4) Literacy as the organ of social progress. One of the most conspicuous features of modern western democracies is their uniformly high levels of literacy. It is commonly held that it was the rise of popular literacy that led to rational, democratic social institutions as well as to industrial development and economic growth and that any decline in levels of literacy poses a threat to a progressive, democratic society.

Historians have attempted to specify the relation between literacy and social development in the West. Cipolla (1969, p. 8) found that although historical patterns were far from uniform “it appears that the art of writing is strictly and almost inevitably connected with the condition of urbanization and commercial intercourse.” The correlation invites the inference that literacy is a cause of development, a view that underwrites the UNESCO’s commitment to the “eradication of illiteracy” by the year 2000 as a means to modernization (Graff, 1986).

The perceived relation between literacy and social development has sometimes been expressed with considerable zeal. Luther, writing in the sixteenth century, urged the establishment of compulsory education arguing that a neglect of learning would result in “divine wrath, inflation, the plague and syphilis, bloodthirsty tyrants, wars and revolutions, the whole country laid to waste by Turks and Tartars, even the pope restored to power” (Strauss, 1978, p. 8). Gibbon, writing in the eighteenth century, claimed: “The use of letters is the principal circumstance that distinguishes a civilized people from a herd of savages, incapable of knowledge or reflection.” He continued

“We may safely pronounce that, without some species of writing, no people has ever preserved the faithful annals of their history, ever made any considerable progress in the abstract sciences, or even possessed, in any tolerable degree of perfection, the useful and agreeable arts of life” (Gibbon, 1776/1806, p. 218).

An Ontario educator, writing in the last century but furnished with the new art of statistics, reported that “an uneducated person commits fifty-six times as many crimes as one with education” (cited by de Castell, Luke & Egan, 1986, p. 92)!

While we readily recognize some of these expressions as histrionic, it is generally granted that literacy has social and economic implications. These beliefs find expression in the policy documents and in the editorial pages of many, perhaps most, newspapers. Representative is that of “Canada’s national newspaper” which recently asserted that “malnutrition, ill-health and illiteracy form a triple scourge for developing nations,” that the illiterate are doomed to “lives of poverty and hopelessness” because they are “deprived of the fundamental tools to forge a better life,” namely literacy, that “illiteracy is a \$2-billion drag on the economy of Canada” and that “the social costs are enormous” (*Globe and Mail*, October 13, 14, 1987). Belief in the importance of literacy has come to so dominate our common consciousness that even a small decline in spelling-test scores is seen as a threat to the welfare of the society. We see literacy, as do most other literate peoples, as central to our conception of ourselves as cultured, indeed as civilized, people.

Three things “have changed the whole face and state of things throughout the world,” wrote Francis Bacon (1620/1965, p. 373) in the seventeenth century: “printing, gunpowder, and the magnet.” (*New Organon*, Aphorism 129). There seemed little reason to quibble.

(5) Literacy as an instrument of cultural and scientific development. We take it as going without saying that writing and literacy are in large part responsible for the rise of distinctively modern modes of thought such as philosophy, science, justice and medicine and conversely, that literacy is the enemy of superstition, myth and magic. Frazer (1911–1915/1976) in his compendium of myths and beliefs, *The golden bough*, argued for the progressive stages of mankind from magic to religion to science, a view he shared with such philosophers as Comte (1830–42)

and Hegel (1910/1967). In fact, it is usual to trace our modern forms of democratic social organization and our modern modes of thought to “the glory that was Greece.” The Greek achievement has been credited, at least by some, to their alphabetic literacy:

The civilization created by the Greeks and Romans was the first on the earth’s surface which was founded upon the activity of the common reader; the first to be equipped with the means of adequate expression in the inscribed word; the first to be able to place the inscribed word in general circulation; the first, in short, to become literate in the full meaning of that term, and to transmit its literacy to us.

(Havelock, 1982, p. 40)

The importance of writing to the advancement of philosophy and science has, in recent times been examined and defended in a series of major works by such writers as McLuhan (1962), Goody and Watt (1963/1968), Goody (1986), Ong (1982), works which trace a new orientation to language, the world and the mind, to changes in the technology of communication. To an important extent, it was this series of books that turned literacy into a research topic.

(6) Literacy as an instrument of cognitive development. As with cultural development, so too with cognitive development. Genuine knowledge, we assume, is identifiable with that which is learned in school and from books. Literacy skills provide the route of access to that knowledge. The primary concern of schooling is the acquisition of “basic skills,” which for reading consists of “decoding,” that is, learning what is called the alphabetic principle, and which for writing, consists of learning to spell. Literacy imparts a degree of abstraction to thought which is absent from oral discourse and from oral cultures. Important human abilities may be thought of as “literacies” and personal and social development may be reasonably represented by levels of literacy such as basic, functional or advanced levels.

Now the doubts:

(1) Writing as transcription. Writing systems capture only certain properties of what was said, namely, verbal form – phonemes, lexemes, and syntax – leaving how it was said or with what intention radically under-represented. The fact that visual signs can be routinely turned into verbal form obscures the fact that they can be verbalized

in several, perhaps many, different ways by varying the intonation and emphasis and give rise to radically different interpretations. Far from writing being mere transcription of speech, writing is coming to be seen as providing a model for speech itself; we introspect language in terms laid down by our writing systems. Learning to read in part is a matter of coming to hear, and think about, speech in a new way. This is the topic of Chapter 4.

(2) The power of writing. Rousseau raised the objection to claims about writing that has become the touchstone of modern linguistics. He wrote: "Writing is nothing but the representation of speech: it is bizarre that one gives more care to the determining of the image than to the object" (cited by Derrida, 1976, p. 27). That writing was simply transcription of speech was, as we have seen, first advanced by Aristotle but it was being used by Rousseau to criticize the lack of attention to speech. Saussure (1916/1983) for similar reasons, attacked "the tyranny of writing," the fact that linguistic theory took as its object written language rather than spoken: "The linguistic object is not defined by the combination of the written word and the spoken word: the spoken form alone constitutes the object" (pp. 23–24 or p. 45). So convinced are modern linguists of the derivative quality of writing that the study of writing has been largely neglected until very recently. Second, oral languages are not the "loose and unruly" possession of the people that the early grammarians took them to be; all human languages have a rich lexical and grammatical structure capable, at least potentially, of expressing the full range of meanings. Even sign-language, the language of the deaf, which for years was thought to be little more than gesture and pantomime, has been shown to be adequate in principle to the full expression of any meaning (Klima & Bellugi, 1979). And finally, oral discourse precedes and surrounds the preparation, interpretation, and analysis of written discourse (Finnegan, 1988; Heath, 1983). Writing is dependent in a fundamental way on speech. One's oral language, it is now recognized, is the fundamental possession and tool of mind; writing, though important, is always secondary.

(3) The superiority of alphabet. Only in the past decade has a clear case been made against the universal optimality of the alphabet as a representation of language (Gaur, 1984/1987; Harris, 1986; Sampson,

1985). First, counter to the received view, the alphabet was not a product of genius, that is, it was not the miracle of discovery of the phonology of language, but merely the adaptation of a syllabary designed for a Semitic language to the particularly complex syllable structure of the Greek language. Furthermore, an alphabet is of limited use in the representation of a monosyllabic language with many homophones as is the case in Chinese; a logographic system has many advantages for such a language. Nor is the simplicity of the alphabet the major cause of high levels of literacy; many other factors affect the degrees of literacy in a country or in an individual. Finally, our tardy recognition of the literacy levels of non-alphabetic cultures, especially the Japanese who routinely out-perform Western children in their literacy levels (Stevenson et al., 1982) has forced us to acknowledge that our view of the superiority of the alphabet is, at least in part, an aspect of our mythology.

(4) Literacy and social development. Some modern scholars have argued that literacy not only is not the royal route to liberation, but is as often a means of enslavement. Levi-Strauss (1961) wrote:

Writing is a strange thing. It would seem as if its appearance could not have failed to wreak profound changes in the living conditions of our race, and that these transformations must have been above all intellectual in character . . . Yet nothing of what we know of writing, or of its role in evolution, can be said to justify this conception.

If we want to correlate the appearance of writing with certain other characteristics of civilization, we must look elsewhere. The one phenomenon which has invariably accompanied it is the formation of cities and empires: the integration into a political system, that is to say, of a considerable number of individuals, and the distribution of those individuals into a hierarchy of castes and classes . . . It seems to favour rather the exploitation than the enlightenment of mankind. This exploitation made it possible to assemble workpeople by the thousand and set them tasks that taxed them to the limits of their strength. If my hypothesis is correct, the primary function of writing, as a means of communication, is to facilitate the enslavement of other human beings. The use of writing for disinterested ends, and with a view to satisfactions of the mind in the fields either of science or the arts, is a secondary result of its invention – and may even be no more than a way of reinforcing, justifying, or dissimulating its primary function.

(pp. 291–292)

While the contrast between enlightenment and enslavement may be overdrawn by Levi-Strauss, enlightenment is an effective means of ensuring the adoption of orderly conventional procedures. A number of historical studies have suggested that literacy is a means for establishing social control, for turning people into good citizens, productive workers, and if necessary, obedient soldiers (Aries, 1962). Strauss (1978, p. 306) concluded that the emphasis on literacy by the Protestant church in Reformation Germany could be seen as the attempt to convert the populace “from their ancient ways and habits to a bookish orthodoxy resting on the virtue of conformity.” The rise of universal, compulsory education has rarely, if ever, been sought by the uneducated as a means of liberation but rather imposed on them by a well-meaning ruling class in the hope of turning them into productive workers and well-mannered citizens (de Castell, Luke & Egan, 1986; Graff, 1986; Katz, 1968; but see Tuman, 1987, chapter 5, for a critique of revisionist accounts). Recent calls for improvements in basic skills whether in Canada, the United States or Britain, come largely from employers in business and industry rather than from the workers themselves. And, with notable exceptions, the demand for evening, adult education courses, is a direct function of the amount of education people already have. So, is literacy an instrument of domination or an instrument of liberation? The impossibility of answering such a question has led such writers as Heath (1983) and Street (1984) to distinguish types of literacy, different ways of using and “taking from” texts, which are embedded in different social contexts; there may be no one literacy and no single set of implications.

Clanchy (1979) pointed out how the government policy of compulsory education as debated in Europe in the nineteenth century reflected not one literacy but two:

Opponents of government policy were worried that schools might succeed in educating people to a point where there would be a surplus of scholars and critics who might undermine the social hierarchy. Such fears were allayed by reformers emphasizing elementary practical literacy and numeracy (the three Rs of reading, writing and arithmetic) rather than a liberal education in the classical tradition, which remained as much the preserve of an elite of *litterati* in 1900 as it had been in 1200.

(1979, p. 263)

Similar complexities occur when we look more closely at industrial development. Simple claims regarding the relation between general levels of literacy of a population and economic development have not stood up to scrutiny. Cipolla (1969) and Graff (1979, 1986) have reviewed the disorderly relationship between popular literacy and economic development from the Middle Ages through the nineteenth century. They both noted that advances in trade, commerce, and industry sometimes occurred in contexts of low levels of literacy. Moreover, higher levels of literacy do not reliably presage economic development.

Kaestle, Damon-Moore, Stedman, Tinsley, and Trollinger's (1991) careful review of literacy in the US led them to conclude that literacy must be analyzed in specific historical circumstances and that "although for purposes of public policy, increased literacy is assumed to benefit both individuals and society as a whole, the association of literacy with progress has been challenged under certain circumstances" (p. 27).

The same point has been made in regard to the lack of scientific and economic development in other societies. In China the number of highly literate people always greatly exceeded the number of employment opportunities available (Rawski, 1978) and in Mexico while literacy levels have been found to be related to economic growth those effects were restricted largely to urban areas and to manufacturing activities (Fuller, Edwards, & Gorman, 1987).

Consequently, it is easy to overstate or misstate the functionality of literacy. Literacy is functional, indeed advantageous, in certain managerial, administrative and an increasing number of social roles. But the number of such positions which call for that level or kind of literacy is limited. Literacy is functional if one is fortunate enough to obtain such a position and not if not. Other, more general, functions served by literacy depend on the interests and goals of the individuals involved. The notion of "functional" literacy, unless one addresses the question "functional for what" or "functional for whom" is meaningless.

(5) Cultural development. Over the past two or three decades cultural historians and anthropologists have made us aware of the sophistication of "oral" cultures. Havelock (1963, 1982) provided evidence

that much of the “glory that was Greece” had evolved in an oral culture; writing had less to do with its invention than with its preservation. W. Harris (1989) showed that the degree of literacy in classical Greece, far from being universal, was quite limited. Probably no more than ten per cent of the Greeks in the era of Plato were literate. Thomas (1989) and Anderson (1989) have shown that classical Greek culture was primarily an “oral” culture, favoring the dialectic, that is discussion and argument, as instruments of knowledge and that writing played a small and relatively insignificant part. Consequently, it is unlikely that we can simply attribute the intellectual achievements of the Greeks to their literacy. Indeed, Lloyd (1990, p. 37) found that the discourse that gave rise to the distinctively Greek modes of thought “was mediated mainly in the *spoken* register.” And anthropological studies of oral cultures, far from sustaining the earlier claims of Levy-Bruhl (1910/1926, 1923), have revealed both complex forms of discourse (Bloch, 1989; Feldman, 1991) and complex modes of thought which, for example, allowed Polynesian navigators to sail thousand-mile voyages without the aid of compass or chart (Gladwin, 1970; Hutchins, 1983; Oatley, 1977). Consequently, no direct causal links have been established between literacy and cultural development and current opinions run from the ecstatic “Literacy is of the highest importance to thought” (Baker, Barzun, & Richards, 1971, p. 7) to the dismissive “Writing something down cannot change in any significant way our mental representation of it” (Carruthers, 1990, p. 31).

(6) Literacy and cognitive development. It is simply a mistake, critics say, to identify the means of communication with the knowledge that is communicated. Knowledge can be communicated in a number of ways – by speech, writing, graphs, diagrams, audio tapes, video. The role of the school is not to displace children’s pre-school perceptions and beliefs but to explicate and elaborate them, activities that depend as much or more on speech as on writing. Emphasis on the means may detract from the importance of the content being communicated. Furthermore it overlooks the significance of content in reading and learning to read. Reading ability depends upon not only letter and word recognition but in addition on the general knowledge of events that the text is *about*; consequently, a strict distinction between basic skills and specialized knowledge is indefensible.

Secondly, the use of literacy skills as a metric against which personal and social competence can be assessed is vastly oversimplified. Functional literacy, the form of competence required for one's daily life, far from being a universalizable commodity turns out on analysis to depend critically on the particular activities of the individual for whom literacy is to be functional. What is functional for an automated-factory worker may not be for a parent who wants to read to a child. The focus on literacy skills seriously underestimates the significance of both the implicit understandings that children bring to school and the importance of oral discourse in bringing those understandings into consciousness – in turning them into objects of knowledge. The vast amounts of time some children spend on remedial reading exercises may be more appropriately spent acquiring scientific and philosophical information. Indeed, some scholars find the concern with and emphasis on literacy puzzling. Bloch (in press) pointed out that even in the tiny remote village of rural Madagascar which he studied, in which literacy has essentially *no* functional or social significance, everyone, educated or not, is “absolutely convinced of the value of schooling and literacy” (p. 8). For the first time, many scholars are thinking the unthinkable: is it possible that literacy is over-rated?

Thus we see that all six of the major assumptions regarding the significance of literacy are currently under dispute. Yet despite the fact that virtually every claim regarding literacy has been shown to be problematic, literacy and its implications cannot be ignored. Derrida (1976, pp. 30–31) pointed out “this factum of phonetic writing is massive: it commands our entire culture and our entire science, and it is certainly not just one fact among others.” Addressing this complexity by the enumeration of pros and cons, advantages and disadvantages of literacy – the so-called balanced perspective – is, as we have just seen, of limited use. What is required is a theory or set of theories of just how literacy relates to language, mind and culture. No such theory currently exists perhaps because the concepts of both literacy and thinking are too general and too vague to bear such theoretical burdens.

That is not to say that theories of great scope and influence have not been advanced. Although we shall consider these theories in detail in